



PATENT APPLICATION

IN THE U.S. PATENT AND TRADEMARK OFFICE

February 13, 2007

Applicant(s): Yoji KUBOTA et al.

For: IMAGING LENS

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Mail Stop Amendment  
Commissioner for Patents  
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RESPONSE TO OFFICE ACTION

Sir:

This is in response to the Office Action mailed November 14, 2006.

In the Office Action, claims 1-10 stand rejected under 35 USC §102(b) as being fully anticipated by Betensky U.S. Patent No. 4 109 995. This rejection is respectfully traversed.

It is well established that in order for a claim to be anticipated by a prior art reference, each and every element of the claim must be found in that reference. Betensky '995 discloses a three element lens comprising two outer positive meniscuses and a central negative meniscus with all three elements concave to the aperture stop between the negative meniscus and a positive element. Referring to Figure 2, by way of example, the three lens elements (L1, L2, L3) have surfaces (S1-S6) defined by radii (R1-R6). An optical axis of the three element lens system is shown by a dotted center line. Betensky '995 appears to disclose that the aspherical

lenses have a uniform radius of curvature on each surface. Betensky '995 does not disclose that any of the surfaces of the lens elements exhibit an inflection point, as required by claim 1.

An inflection point is well accepted in the field as signifying a change of curvature from convex to concave or vice versa. For example, referring to page 12, first paragraph of the specification, an inflection point is provided in the first lens surface R5 and in the second lens surface R6 of the third lens so that the annular zone of the lens periphery of the third lens forms a convex surface towards the imaging surface side. The maximum exit angle of the principle ray is adjusted to 22 degrees with respect to the total angle of view of 63 degrees. By making the maximum exit angle smaller with respect to the element surface of the photo sensor, shading is prevented and aberrations can be corrected in order to adapt to higher resolutions in the photo sensors. Betensky '995 does not disclose this feature of the third lens, nor does it use an inflection point anywhere in the three element lens system.

In the Office Action, wherein reference is made to Figure 2 of Betensky '995, the Examiner points out that the aspherical surface of the third lens has one inflection point on its optical axis. This is not correct. At the optical axis, the third lens exhibits a peak in its curved surface. As stated above, this peak of the lens surface at the optical axis is not an inflection point because the curvature of the lens does not change from a convex to a concave state at this point. Betensky '995 does not disclose any inflection points on any of the elements of the disclosed lens. Accordingly, claim 1 is not anticipated by Betensky '995 and should be considered allowable over this reference. Claims 2-10 depend from claim 1 and further define the invention, and should be considered allowable therewith. Withdrawal of the objection of claims 1-10, and reconsideration of the claims, is respectfully requested.